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# Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 115

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WORLDWIDE REPORT  
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## WORLDWIDE AFFAIRS

### FINLAND SENDS NUCLEAR WASTE FROM LOVIISA PLANT TO USSR

Helsinki HELSINGIN SANOMAT in Finnish 16 Aug 81 p 23, 19 Aug 81 p 8

[Article by Risto Valkeapaa: "Nuclear Waste to be Transported Secretly Across the Border"]

[Text] Finland's most closely guarded secret is the moment when the nuclear waste from the Loviisa Nuclear Power Plant will leave the island of Hastholmen on its return trip to the Soviet Union.

A year has been spent in the preparation of this first return trip or shipment of used nuclear fuel. Recently almost any day has been predicted as the departure date, even this Sunday morning.

The risk studies and theoretical calculations concerning the possibility of an accident have been completed. The transport equipment has been put in order and tested for several weeks. The transport route from Loviisa to Vainikkala has been tested and rescue plans have been prepared along the route. Fire chiefs along the route in residential areas will be on their toes when this first special shipment passes by.

The train that will transport the nuclear waste will travel a slow 15 kilometers per hour through Loviisa, Lahti, Kouvola, and Lappeenranta. The preparations have been thorough and unprecedented, but nearly one-fourth of Finland and hundreds of thousands of people will be made subject to risk.

The shipment is considered to be so safe and will move in the vicinity of so few people that there is no desire to let the public know of it according to Imatra Power. It is expected that the whole shipment will be handled with very little attention brought to it.

The most important reason for the top secrecy of this matter is, however, the fact that nothing or no one should cause any problems or delays while 14 tons of spent nuclear fuel are transported by highway and rail from the island of Hastholmen to Viipuri [Vyborg].

#### Departure Only in Need of Permission

The transport containers for transporting the nuclear waste along the highway will

be brought from the island of Hastholmen to the train station in Loviisa where the containers will be transferred to a special Soviet train. The remainder of the trip will be by rail.

The special train for transporting the fuel arrived in Loviisa at the end of July. Upon arrival defects were found in the transport containers in the water pipes along the bottom or in the welded joints connecting the bottom plugs. Atomenergoexport [All-Union Institute for the Export of Nuclear Energy] fixed the defects in the bottom plugs and the containers were declared to be safe for loading with fuel rod clusters at the power plant. Defects were also found this week in the carriages of the transport trucks. On Thursday Imatra Power reported that their repair will take several days. After the repair, loading, and examination of the containers the only thing that remains to be done is to obtain permission from the Radiation Safety Institute.

The first "sweaty" shipment from Loviisa's Hastholmen Island to the train station in Loviisa, where the special Soviet train is located, will be taken care of by special drivers Keijo Pyyhtia and Hannu Karvinen. The length of the trip is approximately 16 kilometers.

The transport equipment is comprised of two heavy-duty, English-made, 370-horse power trucks normally used for transporting electric transformers. Transfer carriages, onto to which the nuclear waste containers will be lifted, will be attached to the back of them.

Pyyhtia's and Karvinen's job is to drive the containers one at a time from Hastholmen to the railroad yard located in the center of Loviisa.

This special shipment of nuclear waste will be no different than any other cargo for these professional drivers. They say that they understand very well the importance of this shipment. "The concern of others has not, however, increased the pressure," argues Keijo Pyyhtia, 38 and a bachelor.

But it is certain that even these professional drivers will feel better after the load has been safely delivered to the railroad yard in Loviisa.

#### Risk of Accident Calculated to be Small

Preparations for the transfer of this nuclear waste have been going on for a long time already. Imatra Power had the State Technical Research Institute conduct a risk study in 1979. It was accomplished according to the requirements.

In this risk study the average person is concerned by the information that in the worst possible case an individual can receive a radiation dosage of 1.6 rem if he remains in the vicinity of the accident for 10 days. According to the law and security stipulations the highest allowable annual dosage for a worker is 5 rem at this time.

In the summary of the risk study it was confirmed that the theoretical possibility of an accident is one in 500,000 years if two shipments are made every year. Statistics on accidents served as the basis of this theoretical calculation.



Railroad grade crossings, of which there are several between Loviisa and Viipuri, are considered to be the worst spots during the transporting of the nuclear fuel.

All in all, the risk study evaluated the risks to be quite small. In evaluating risks it must also be taken into consideration that special care must be taken in making preparations for the shipment. The State Railroads arranged an undisturbed schedule for the shipment, among other things.

#### An Atomic Age Train on an Age Old Route

However, the State Railroads has not won everyone's endearment. The city of Loviisa has sharply criticized the condition of the railroad track between Loviisa and Lahti. This section of the track is the weakest link in this shipment. This atomic age cargo will be carried on rail laid in the 1920's. The 15-ton axle weight of the special train carrying the spent fuel is approaching the 17-ton weight limit of the track.

"What if the load ends up in the ditch between Loviisa and Lahti?" is the question of Chairman Martti-Ragnar Nordstrom of the Loviisa Port Authority and city fathers to the State Railroads:

"Since the track must be repaired sometime, why not repair it now since its condition is especially significant to this shipment and the country?"

"The State Railroads assures us that the track will hold up. In any case the special train will travel the route at a very slow speed. Its speed will be only 15 kilometers per hour.

This special shipment has now forced even the railroad administration "to see" the poor condition of old tracks, such as the Loviisa track.

The State Railroads has become aware of the poor condition in which their tracks are. They should be repaired as soon as possible," states State Railroads Director Herbert Romer.

According to Romer the track between Loviisa and Lahti is not in any way in an exceptional position as far as little used older tracks are concerned. Its condition will also be improved only when railroad tracks are to be repaired at a more rapid rate throughout the whole country.

#### Defects in Containers Accidentally Made Public

The individual who did a poor job of welding the water pipes and the bottom plugs of the transport containers also did not win anyone's praise.

Atomenergoexport has now repaired the defects observed in the examination conducted by the Finns. Imatra Power can now report that there are no defects in the containers. This is what it has said all along.

However, the defects were "accidentally" made public when the bottom of one of the containers was covered with plastic at the railroad station in Loviisa. The plastic was taped up to protect two fist-sized radiating spots. The nuclear power people were talking about surface contamination.

Since radiation fuel is normally inside the container, one can assume that any surface contamination is from within the container. The bottom plug of the container with the protective covering had simply leaked and active water had dripped onto the outer surface.

At the Radiation Safety Institute the leaking of the bottom plug is considered to be the probable explanation for the activity appearing on the bottom surface of the container.

Otherwise the containers have met Finnish requirements rather well. Ultrasonic measurements and inspections did not reveal anything significant.

#### Containers to be Sealed

Precise security measures will be applied with respect to nearly all of the operations connected with the return of the fuel. The Radiation Safety Institute will supervise the operation from the beginning to the end. Also the transport containers will require the approval of the Radiation Safety Institute.

The fuel rod clusters will be transferred within the nuclear power plant to the supervision of the Radiation Safety Institute. The clusters will be transferred to the transport containers in tanks under water in the storage area for used fuel.

Before the lid of the transport container is bolted shut a representative of the Radiation Safety Institute will inspect the characteristics and the quantity of the clusters. The bolted lid will be sealed.

"When the fuel rod clusters are from all respects ready in the container, the water will be drained from the container and will be replaced with nitrogen," states Antero Tamminen, chief of the Loviisa Plant's technical group.

The fuel that will now be transferred was taken from the Loviisa I reactor 3 years ago. It continues to produce enough heat for a small sauna and raises the temperature of the nitrogen surrounding it to more than 100 degrees.

The filled container will be allowed to equalize itself before it is transported. During shipment the pressure will be nearly the same as that of a hard motor vehicle tire, or approximately 2 baria.

If one were to touch the surface of the filled container, one's fingers would not be burned. The temperature of the outer surface is approximately 40 degrees, and the cooling ridges on the surface of the container facilitate heat transfer.

According to the Radiation Safety Institute it is not dangerous to be near the filled containers.

#### Side Streets to the Railroad Yard

The commencement of the shipment will mean that traffic will have to be regulated on the main roads. The distance from the plant to the railroad yard is approximately 16 kilometers.



The traffic dividers along the route from Hastholmen to Loviisa station have from the very beginning been made so that they can be moved. The only thing that needs to be done at the crossing of highway 7 and the road coming from the power plant is to carry the concrete markers out of the path of the trucks carrying the nuclear waste.

The cargo will travel along the highway at approximately 20 kilometers per hour under strict supervision. In addition to the drivers, there will be approximately five individuals in the truck engaged in supervision work. The shipment will also be accompanied by a convoy of several individuals.

In the center of Loviisa the cargo of nuclear waste will travel through town along Mannerheim Street. Before it reaches the railroad yard it will also have to follow side streets. The route has been tested previously so that there should be no surprises.

The approximately 4-meter high and 83-ton containers will be transferred to a special train with a 200-ton crane, which has been used in connection with other large shipments for Imatra Power.

In addition to the poor condition of the railroad track between Loviisa and Lahti, the more significant points along the railroad track are in the center of Lahti where an accident would cause the most extensive radiation effects on the population. In practice the most extensive rescue plans are needed in Lahti.

#### Another Shipment Next Year

The shipment will travel 16 meters above the surface of Kymi River on the Korja Bridge at Elimäki. The container has been designed to resist a possible drop into water even from this height. In tests corresponding models of containers have been dropped 15 meters on to hard ground.

According to the norms the container should withstand a drop of 9 meters on to hard ground. It should stay airtight for 8 hours in water at a depth of 15 meters. In fire the container should last 30 minutes in a temperature of 800 degrees Celsius.

Kouvola is also a significant point along the transportation route. The undisturbed schedule arranged by the State Railroads at this junction will come to a test.

According to the nuclear waste agreement the Finns will transport the nuclear waste all the way to Viipuri where it will be turned over to Soviet authorities.

This first shipment of spent nuclear fuel will be a demanding and complex operation for the Finns. Real problems caused by nuclear waste will not begin until after Viipuri. The Soviets must resolve the final disposition of spent fuel which will remain active for tens of thousands of years.

The next shipment of used nuclear fuel from Finland to the Soviet Union will be made next year. There will be no shipments of waste in the next 2 years. The pause is a result of the fact that the spent fuel from the reactors in 1980 and after that must cool off for 5 years in Loviisa. Beginning in 1985, 28 tons of spent fuel will be transferred from Loviisa to the Soviet Union annually.

[19 Aug 81 p 8]

#### Nuclear Waste Was Loaded During the Night

The atomic train loaded with spent fuel from the Loviisa I Nuclear Power Plant began its journey from Loviisa station to Viipuri on Tuesday evening just a little before 7:00 o'clock. From Loviisa to Lahti the train will travel at a speed of 15 kilometers per hour since the track on this section is in poor condition and the axle weight of the train is close to the weight limit of the track.

The first shipment of nuclear waste to the Soviet Union will travel from Loviisa to Viipuri via Lahti, Kouvola, and Vainikkala. The train will reach Vainikkala early Wednesday morning.

Rescue plans were made in advance along the route in the event of a possible accident.

All four nuclear waste containers were transferred one at a time from the atomic island of Hastholmen to Loviisa railroad station during the night between Monday evening and Tuesday morning.

The transporting of the nuclear waste along the highway took place without incident, and no dangerous situations occurred even in the center of Loviisa where the final route left Mannerheim Street to wind along side streets. The police kept the route secure along the way.

#### Time of Departure Kept a Secret

Imatra Power kept the departure time of the nuclear train as well as the transport along the highway secret until the last minute. Police Inspector Ruben Hindsberg states that Loviisa police, who participated in the transporting of the nuclear waste along the highway, learned about their duties only a few hours before.

The postponement of information concerning the operation to the police caused difficulties in the compiling of work lists, among other things.

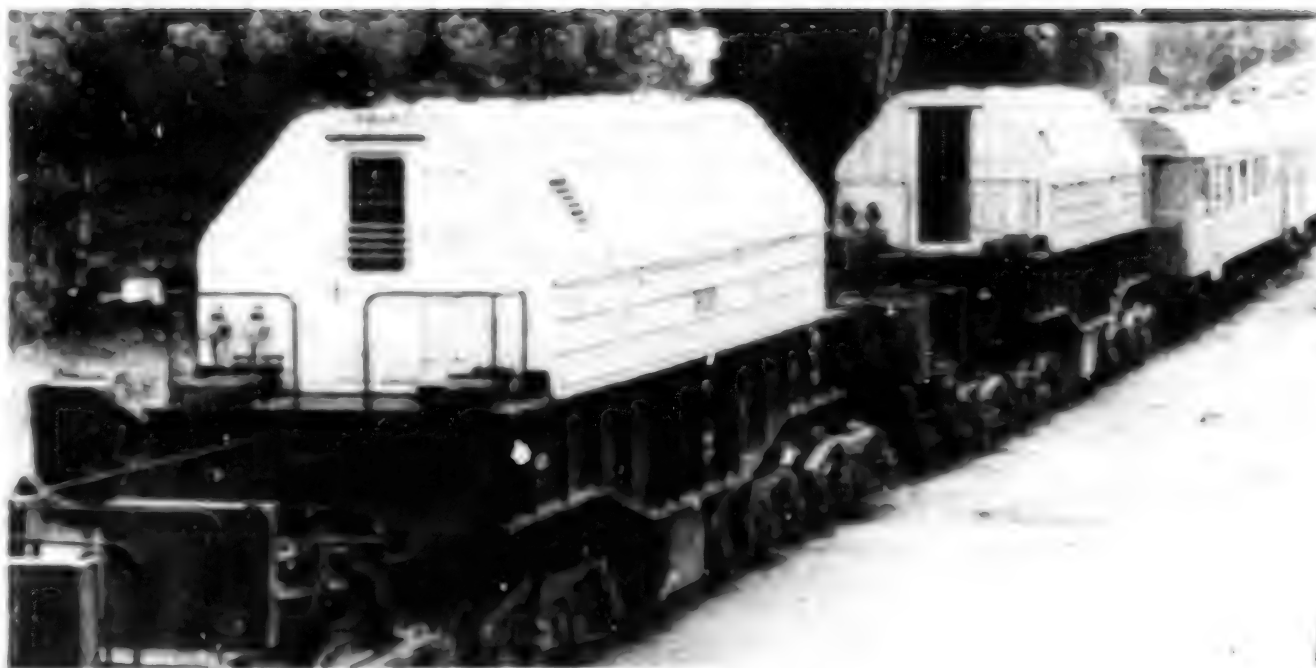
The transporting of nuclear waste through the center of Loviisa did not provoke the anger of residents, but it also did not cause any joy. During the transporting of the first container the following comment was heard on the street corner: "It's a good thing we are getting rid of this mess," depicts the feelings of the city's residents.

The administrators of the Loviisa Power Plant and the Radiation Safety Institute accompanied the transporting of the nuclear waste along the highway. The various stages of the operation will be thoroughly examined later so that subsequent shipments will go more smoothly.

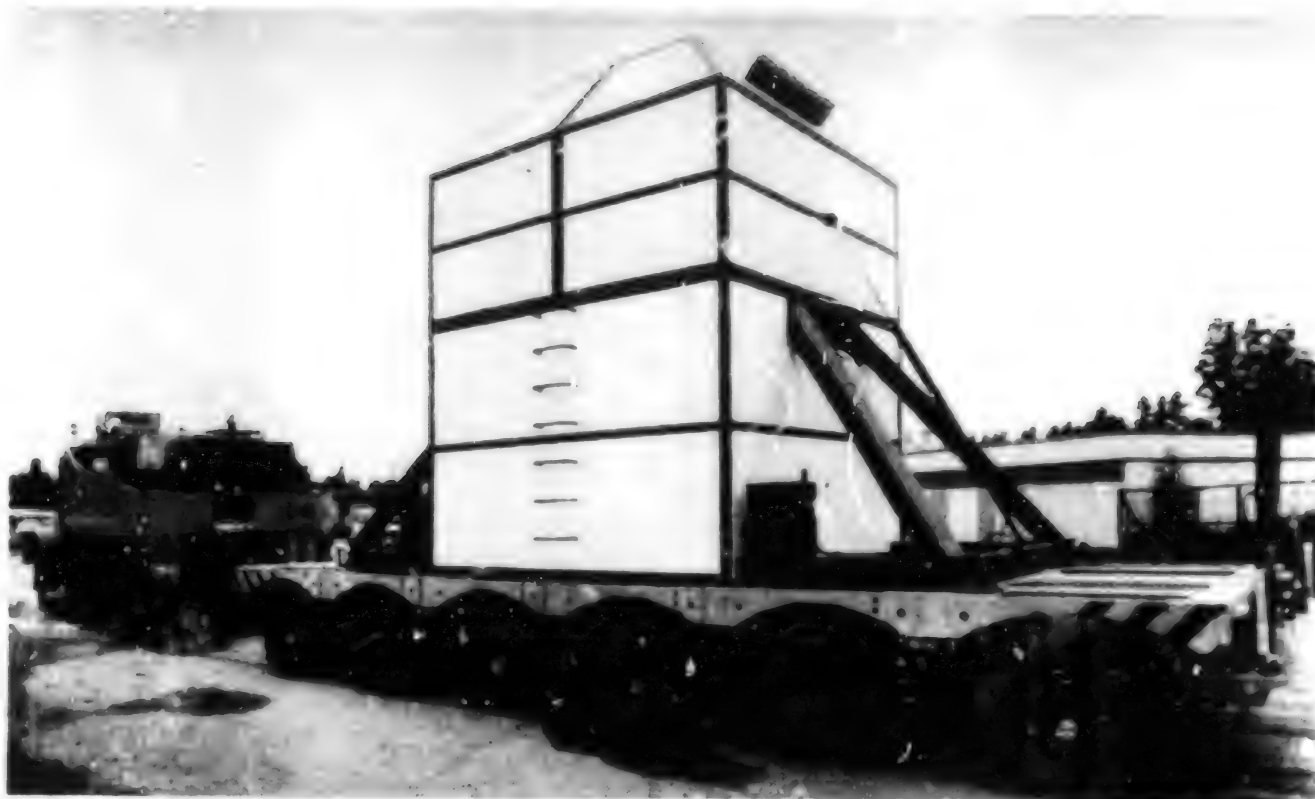
A total of 14 tons of spent nuclear fuel, which has been stored at the Loviisa Power Plant for 3 years, will now be returned to the Soviet Union. The next shipment of spent nuclear fuel will be sent from Finland to the Soviet Union next year.



The transport container is 4 meters high and weighs 83 tons when full. In the risk study its weakest point was determined to be the lid fastener. The lid was bolted shut.



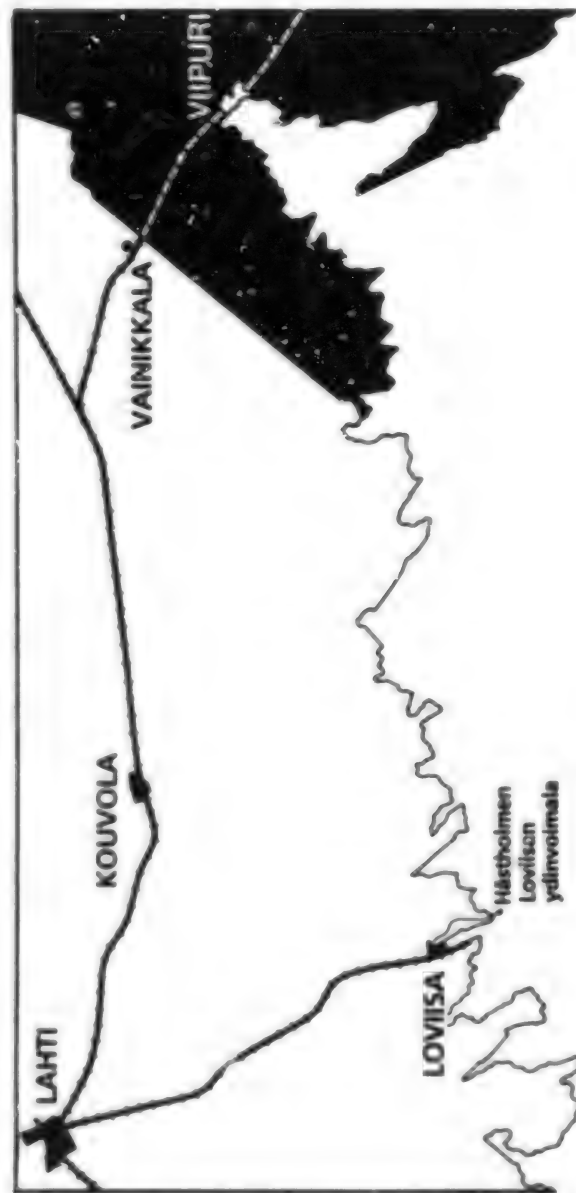
The special Soviet train has been reserved for a period of 1 month for the Lovisa shipments. In addition to the Soviet Union the same type of transport equipment is used in the GDR and Bulgaria.



On the highway the container travels inside a metal plated box. The primary purpose of the box is to protect the container from tipping over and from dust.

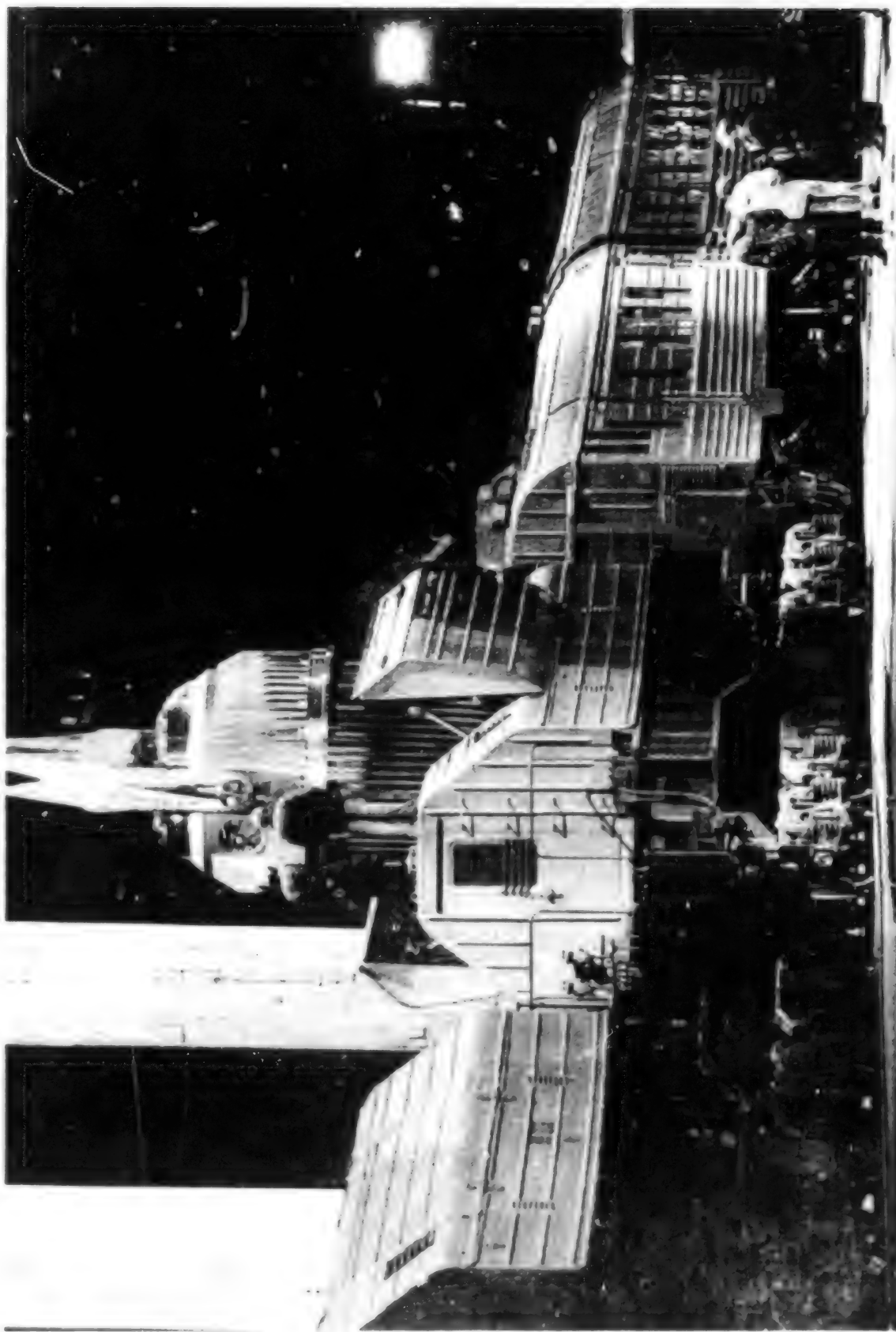


Special driver Keijo Pyyhtia will drive the container to the Loviisa railroad yard.

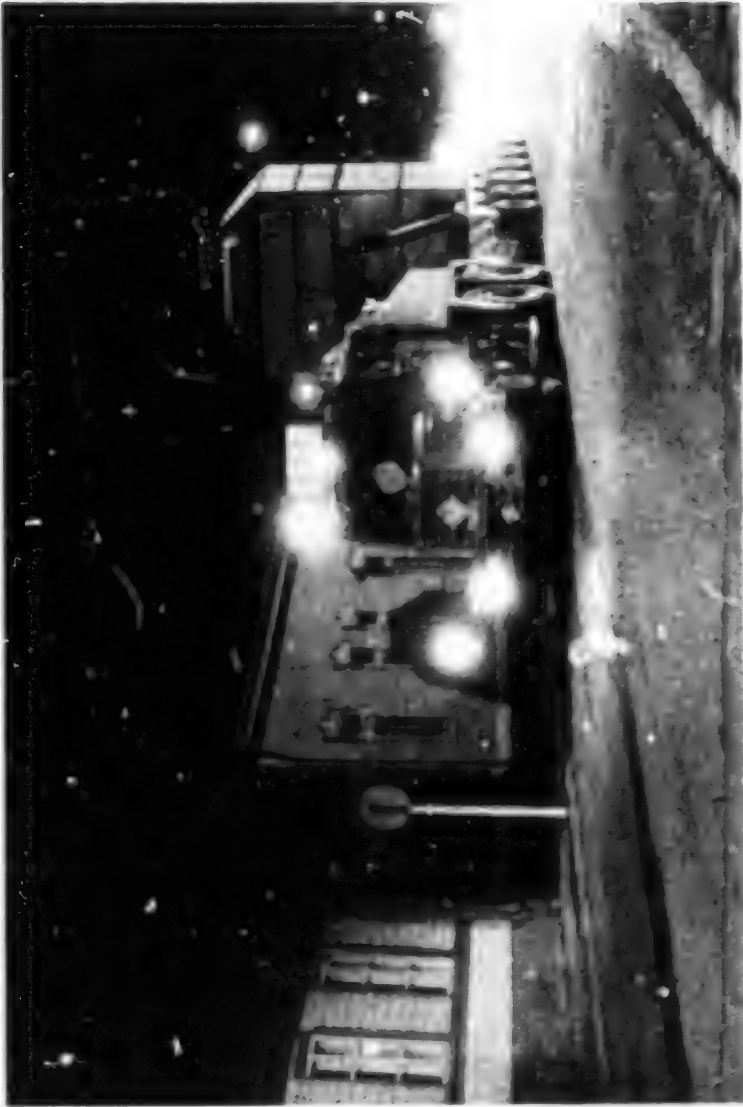
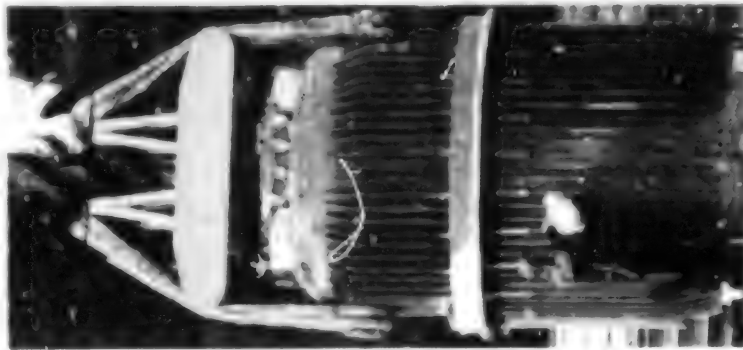


The nuclear waste will be transported by truck from Hästholmen to the Loviisa railroad yard from where the journey will continue to Viipuri via Lahti, Kouvola, and Vainikkala.





The 83-ton containers of waste fuel were loaded on to Soviet railroad cars by Imatra Power's crane at Loviisa station.



Radioactivity was examined the whole time. The nuclear waste convoy travelled along quiet and empty streets. The transporting and loading lasted until Tuesday evening.

## NUCLEAR PROGRAM COSTS TO HIT 117 BILLION CRUZEIROS BY END OF YEAR

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 16 Aug 81 p 53

[Text] Rio--The costs of the Brazilian nuclear program will reach 117 billion cruzeiros by the end of the year but despite the enormous outlay, the Angra-I plant will not go into commercial operation until 1982; Angra-II is still in the foundation stage; the Angra-III project is at a standstill and research work is "moving very slowly," according to the scientists.

A considerable part of those funds (88.3 percent) belongs to the Brazilian Nuclear Corporation (NUCLEBRAS), which has 107 billion cruzeiros, 81.42 billion of which are intended for capital expenditures. Of those expenditures, 75.83 billion cruzeiros will be spent on investments. In the area of current expenditures, the bulk pertain to financing charges which will consume no less than 8.38 billion cruzeiros to pay off obligations, especially for foreign loans.

Next month, the German firm KWU will be delivering equipment to NUCLEBRAS which was to have been installed this year in the buildings of the Angra-II plant. Since those buildings have not been built, inasmuch as the heading slab had not even been begun, the equipment will remain idle and possibly stored in the port of Hamburg, Germany, at a high cost for safekeeping and insurance. Nuclear sector experts revealed that the equipment, to be paid for this year, cost 25 billion cruzeiros. The president of the company, Ambassador Paulo Nogueira Batista, denied that that was the cost of the equipment but did not clarify what it was.

## Investments

With regard to its investments, NUCLEBRAS explained that in 1981 it is spending a total of 46 billion cruzeiros, most of it (it did not reveal how much) on the civil works of Angra-II and Angra-III. According to that company also, 23 billion are being spent on the fuel cycle--exploration and prospecting of uranium--and the Pocos de Caldas and Rezende plants. The remainder of its budget appropriation (107 billion cruzeiros) was distributed among its subsidiaries.

The sources of NUCLEBRAS' funds are not a secret, according to the company itself. Its main receipts (56.8 billion cruzeiros) come from foreign and domestic credit transactions, as follows: external, in service goods, 34.56 billion cruzeiros; external, in currency, 17.82 billion cruzeiros; domestic, in service goods, 4.42 billion cruzeiros. The national participation in credit transactions to obtain

service goods was only 21.9 percent compared to foreign transactions. The second largest source of funds for NUCLEBRAS was the treasury (30 billion cruzeiros) in the form of new supplementary appropriations, because only 2.15 billion cruzeiros were allocated in the form of ordinary funds.

During 1981, Furnas has spent 30 billion cruzeiros on Angra-I but the plant will not be inaugurated until 1982 although the president of the company, Licinio Seabra has announced that the charging of the reactor nucleus for the so-called "critical state" tests will take place next October, the most important tests for the operation of the plant. The plant will go into operation 5 years late and at quadruple the cost, inasmuch as it was originally estimated at \$320 million and it will be completed at a final cost of \$1.4 billion (140 billion cruzeiros).

Sector experts admit that to continue the nuclear program in 1982 according to the terms in which it is drafted (maintaining the timetables), it will be necessary to at least double the 1981 funds. As for the results of those aspirations, they say, only "God and Delfim" know.

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CSO: 5100/2311

# ANGRA-I TO BEGIN OPERATION IN MID-SEPTEMBER

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 7 Aug 81 p 28

[Text] Rio--The previous problems having been resolved and first phase tests having been completed, the Angra-I nuclear plant will begin operations in mid-September, when the nucleus of its reactor will receive the 50 tons of enriched uranium comprising the first charge. The unit will not go into commercial operation until the first quarter of 1982, when the second phase of the tests (critical state) is completed.

That information was provided yesterday in Rio by Furnas president, Engineer Licinio Seabra, who explained that the fuel will be placed in the nucleus during that period of time but that does not mean a set date because any difficulty arising between now and then could result in an immediate change.

The last date given for charging the Angra-I reactor, which is going to operate with a power of 626,000 kilowatts, was last 14 July, according to the announcement of Furnas and National Nuclear Energy Commission (CNEN) experts. Experts from Westinghouse (suppliers of the plant) the International Atomic Energy Agency (IAEA) and the CNEN are still following the final tests of Angra-I.

## Angra-II and III

Licinio Seabra revealed that up to December 1980, Furnas spent \$500 million (50 billion cruzeiros) on Angra-II and III, an amount that will be reimbursed by funds from the National Treasury. Licinio Seabra also explained that Furnas obtained foreign loans in the amount of \$15 million (15 billion cruzeiros) for the two nuclear plants, having utilized only 15 percent of that amount (2.25 billion cruzeiros) and transferring the credit balance to the NUCLEBRAS Nuclear Plant Construction Corporation (NUCON). The credit balance of those funds were passed along to NUCON and the 2.25 billion cruzeiros spent will be computed in the overall price of the two plants when they are ready.

With regard to the 26 secret appendices to the overall contracting contract signed on 31 July between NUCON and Furnas, when the Angra-II and III projects were transferred, Licinio Seabra said that they are commercial contracts and other documents kept secret by agreement of the interested parties. He pointed out that among those papers are designs, plans, and agreements on the supplying of

technology, services and equipment by Kraftwerk Union AG (KWU), which cannot be made general knowledge but must be restricted to a limited number of people.

Speaking of the company he heads, Licinio Seabra said that Furnas is going to close 1981 with a program in the order of 65 billion cruzeiros, 40 billion of which will be spent on transmission lines, considered a high priority project for the present. For 1982, Licinio hopes to obtain slightly more than 100 billion cruzeiros for Furnas' budget, 80 billion of which will be for transmission lines. He justified the high expenditure on those lines with the explanation that next year that work will reach its level in the southeast to keep up with the progress of the work on the Itaipu hydroelectric plant, which will have an essential role in supplying energy for that region.

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5100/2311



# CALS SEES URANIUM CONCENTRATE EXPORTS IN MID-1990

Rio de Janeiro O GLOBO in Portuguese 8 Aug 81 p 17

[Text] Brazil may be selling uranium concentrate in mid-1990 if one of the eight nuclear plants called for in the Brazilian-German agreement is installed in the Itataia region in Ceara, Mines and Energy Minister Cesar Cals said yesterday. He said that the installation of a plant in Ceara is an idea that has everything favoring implementation because of its strategic location near the large uranium deposits and other raw materials necessary for concentrate technology.

Cals revealed that he has already been consulted by several countries regarding the possibility of Brazil supplying uranium beginning in the next decade, when a world shortage of that fuel is expected. On that and other bases, a plant in Ceara territory becomes very viable, he stressed.

## Reserves

Making penciled calculations, the minister revealed that the reserves in Ceara can produce 3,000 tons of uranium concentrate per year and 400,000 tons of phosphates. There is a large quantity of gypsum in that region, a material that supplies the sulphuric acid used in the manufacture of concentrate. The phosphate (which appears in association with the uranium) would be exploited by the PETROBRAS Fertilizer Corporation (PETROFERTIL), a subsidiary of the Brazilian Petroleum Corporation (PETROBRAS) together with private companies.

## Trip to Nairobi

The minister said that in Nairobi, Kenya, for which he would be leaving a few hours later, he will give a report on the Brazilian energy model during the UN World Conference on New and Renewable Sources of Energy. "We will make a profession of faith that all developing countries will have a way out in the world energy crisis provided they promote bilateral agreements on regional terms to utilize their own resources," he declared.

The minister will say that the Brazilian experience may stimulate similar programs in Third World countries and in that case Brazil is in an appropriate position to sell technology.

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CSO: 5100/2311

## BRIEFS

BAHIA URANIUM SURVEY--The broadest geologic survey of its kind, covering an area of 1,150 square kilometers will be conducted around the second largest uranium deposit in the country (48,000 tons) in the town of Lagoa Real, municipality of Caitite, Bahia. The broadness of the survey is due to two factors: the uranium in the region is pure (uraninite) and there are possibilities of finding large reserves. That information was revealed in Rio yesterday by nuclear area experts, who added that an agreement will be signed between the Brazilian Nuclear Corporation (NUCLEBRAS) and the Bahia Mineral Exploration Company on the 17th of this month to conduct the survey, at a cost of 120 million cruzeiros and lasting 21 months. In Brasilia, the president of the Brazilian Electric Power Corporation (ELETROBRAS) and the Itaipu Binational, General Costa Cavalcanti, said yesterday that he is unaware of any action or study by the drafters of the so-called "Plan 2000" for the installation of a nuclear plant in the state of Ceara, terming that possibility "Cesar's Business," (referring to Minister of Mines and Energy Minister Cesar Cals). He added that the document, covering projects up to 1985, will be released by the end of October. [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 12 Aug 81 p 24] 8711

CSO: 5100/2311

## BRIEFS

NUCLEAR REACTOR PROGRAM--The Ecuadorean Atomic Energy Commission has revealed that work advances on the building and operating of a nuclear reactor, in a program that will greatly benefit the country's productive sector. The reactor will be installed in the southwestern region of Pichincha Province at a site called Aychapico, 2 km from Aloag. The program receives technical cooperation from Spain and will cost 225 million sucres. The reactor's main task will be to convert radioisotopes that will be used, under technical specifications, in Ecuador's main production areas. [Text] [PA140055 Quito Diplomatic Information Service in Spanish 0640 CMT 8 Aug 81]

CSO: 5100/2321

JAPAN TO ASSIST IN URANIUM EXPLOITATION PROJECT

AB101201 Paris AFP in French, 0921 GMT 10 Sep 81

[Text] Niamey, 10 Sep (AFP)--A Japanese company, the Power Reactor and Nuclear Fuel Development Corporation (PNC), on Wednesday signed a protocol agreement in Niamey with the Niger Mineral Research Office (ONAREM) for the prospecting and exploitation of a new uranium deposit, it was learned from official sources in Niamey this morning.

The ONAREM-PNC association will soon begin prospecting operations in the department of Agadez--northern Sahara--at In-Adrar. The protocol accord was signed for Niger by Minister of Mines Annou Mahamane and Sani Koutoumbi, the director of ONAREM. Mikio Isetani, the PNC director, signed for his company.

According to the agreement, Japan is to finance the prospecting operations as well as the cost of installations valued at 400 million CFA francs--F9 million--for the first year; 500 million CFA francs for the following 2 years; and 600 million CFA francs for the fourth year.

Japan is already actively engaged in the prospecting and exploitation of uranium in Niger through the Overseas Uranium Resources Development Company which controls 25 percent of the capital of the Akouta Mining Company (COMINAK) one of the two big uranium exploitation companies in Niger. The other is the Air Region Mining Company (SOMAIR). Since the beginning of the year, Japan has bought 816.6 tons of uranium from Niger.

CSO: 5100/4962

## ZAMBIA

### BRIEFS

URANIUM PROSPECTING EXPENDITURES--AGIP Spa will spend about K15 million in uranium prospecting in Southern and North-Western provinces during the 1980-84 period. Agip Spa Zambia branch manager Dr Gian Paolo Barzon said this in Lusaka when he commented on progress made by his company in uranium prospecting in the two provinces. Dr Barzon said by 1984 when the prospecting work was expected to be completed, Agip will have spent K15 million in prospecting operations that include drilling and geological survey. The company started its drilling programme in the Gwembe valley in 1979. The drilling operations though costly undertakings were still going on. Dr Barzon said his company's operations in the Gwembe valley had been reduced because of the security situation in the area. "We hope to intensify our operations in Southern Province when the authorities will tell us that it is safe to work in other areas covered in our licence but which we consider unsafe at the moment." Drilling operations which started in Solwezi last year were said to be satisfactory. Dr Barzon said 40,000 metres were drilled last year and a further 20,000 metres were expected to be drilled by the end of this year.[Text] [Lusaka TIMES OF ZAMBIA in English 31 Aug 81 p 4]

CSO: 5100/4961

## NEW URANIUM DEPOSIT NEAR LIMOGES BEING EXPLOITED

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[Text] A new uranium deposit beneath the site of La Crouzille (Haute-Vienne), north of Limoges, will soon be put into exploitation. "There is no contradiction with the decisions of the Council of Ministers on 30 July not to grant new mining rights," says a source close to the Energy Ministry. "The request to open was filed by the General Nuclear Materials Company (COGEMA) on 2 July 1980 and the prefect gave his agreement in February 1981." As a matter of fact, for 30 years COGEMA has had in La Crouzille, north of Limoges, a huge concession from which it was extracting uranium. So it did not have to request an exploitation permit or mining rights, simply permission to "oper. mining work."

The deposit in question, which is several km from the underground Margnac Mine, would be capable of supplying about 500 tons of uranium metal. It extends, open-face, over about 60 hectares of moors and swampy prairies.

On Wednesday about 100 antinuclear demonstrators met in front of the SNCF [French National Railroad] terminal at Equeurdreville, near Cherbourg (Manche) to protest the arrival by rail of irradiated fuel destined for the processing center at the Hague.

Yesterday, section 1 of the Fessenheim (Haut-Rhin) Nuclear Power Plant, which was closed early in June to renew the fuel, was coupled to the EDF [French Electric Power Company] system. The Diesel group connected to the section, which had been damaged by an accidental fire, was replaced by a mobile gas turbine. But this turbine will remain in place only until the Diesel group is permanently repaired, which is scheduled for the end of September. Section 2 of Fessenheim will be closed as scheduled on 29 August to refuel the reactor.

FO [Workers Force] has declared itself in favor of a nuclear map which would give priority to the idea of security over profitability. A delegation from the power plant was received by the minister of Energy. Concerning security, a communication was presented to the International Conference on Structural Engineering Applied to Reactor Technology; the cracks that appeared nearly two years ago on some French nuclear power plant parts will not present any danger until about 50 years from now, at a very pessimistic estimate, actually until a century or two from now, or well beyond the lifespan of these installations.



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